

BUREAU OF INDIAN STANDARDS**APPROVED MINUTES**

Name of the Committee	No. of Meeting	Date	Time	Venue
Agriculture and Food Processing Equipment Sectional Committee, FAD 20	24 th	3 April 2024 (Wednesday)	09:30 AM	Lal C Verma Hall, Bureau of Indian Standards, HQ, New Delhi

CHAIRPERSON

Dr. S. N. Jha
(Chairperson, FAD 20)
 Deputy Director General
 (Agricultural Engineering)
 Indian Council of Agricultural Research,
 ICAR, New Delhi

MEMBER SECRETARY

Pradeep Sharma
(Member Secretary, FAD 20)
 Scientist-B / Assistant Director
 Food & Agriculture Department,
 Bureau of Indian Standards, New Delhi

Attendance is given in Annex A (*see* page 13)

ITEM 0 GENERAL**0.1 Welcome**

Smt. Suneeti Toteja, Scientist - E and Head of the Food and Agriculture Department, BIS welcomed all the committee members to the 24th meeting of the Agriculture and Food Processing Equipment Sectional Committee, FAD 20 and expressed her appreciation for the work done under the committee since the last meeting.

0.2 Opening Remarks by the Chairman

Dr. S. N. Jha, Deputy Director General (Agricultural Engineering), ICAR, New Delhi, and Chairperson, FAD 20, extended a warm welcome to all the members. In his opening remarks, he emphasized on the importance of having physical meetings and suggested that the provision for joining the meeting online should be made for members whose inputs are crucial and are unable to join the meeting physically.

While appreciating the progress of work under the committee during 2023-24 as highlighted by member secretary, FAD 20, Dr. S.N. Jha shared his vision of making this committee as the best among all other technical committees of Food and Agriculture Department, BIS by 31 March 2025.

ITEM 1 CONFIRMATION OF THE MINUTES OF THE TWENTY THIRD MEETING

The committee confirmed the minutes of the last (23rd) meeting of Agriculture and Food Processing Equipment Sectional Committee, FAD 20 held on 29 November 2023 through virtual mode as circulated to the members vide email dated 1 December 2023.

The Committee may confirm the minutes as circulated.

ITEM 2 SCOPE, ACTIVITIES AND COMPOSITION OF THE SECTIONAL COMMITTEE

2.1 Scope & Program of Work of The Committee

The committee noted the scope and program of work of FAD 20 as given in Item 2.1 of the agenda.

2.2 Composition of The Sectional Committee

2.2.1 The committee noted the updated composition of FAD 20 as given in Annex 2 of the agenda. The committee members were apprised about the BIS directives regarding termination of membership on account of absence in two consecutive meetings of the committee. Accordingly, due to non-participation in the last two meeting of FAD 20, the committee recommended (to FADC) to withdraw the following organizations from the membership of FAD 20:

- a) CSIR - Central Food Technological Research Institute (CFTRI), Mysore.
- b) ICAR-Central Institute for Women in Agriculture, Bhubaneswar.
- c) National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Sonapat, Haryana.
- d) Dr Pitam Chandra, In Personal Capacity.

2.2.2 The committee noted the request for membership received from Consumer Voice, New Delhi. After due discussion among the members, the committee decided not to co-opt the organization as a member in FAD 20 due to their limited expertise in standardization work related to post-harvest agricultural equipment. The committee however requested the member secretary to include Consumer Voice, New Delhi in the mailing list of FAD 20 for seeking comments on document under wide circulation stage. Based on the interest and comments received from the said organization on the documents of FAD 20, the committee decided to review their application for co-option in future.

ITEM 3 INDIAN STANDARDS PUBLISHED

The committee noted the list of Indian Standards published since last committee meeting held on 29 November 2023.

ITEM 4 FINALISATION OF DRAFT INDIAN STANDARDS

The committee deliberated upon the draft Indian Standards that had completed wide circulation and decided as under:

Sl. No.	Doc. No. and Title	Status/Comments	Decision taken by committee
1.	FAD 20 (20567)WC Spiral grader — Test code	No comments received during wide circulation.	While referring to the decision taken by FAD 20 for merging the specifications, test code and/or safety requirements of agricultural processing equipment in one standard for convenience to the users of the standard, the committee decided to not progress the document further and requested CIPHET, Ludhiana to include the specification of spiral grader in the draft standard. After receipt of the draft standard from CIPHET, the committee directed the member secretary to circulate the document as a P-draft among members with a new document number.
2.	FAD 20 (24260)WC Air- screen seed/ grain cleaner — Specification (<i>first revision</i> of IS 11041)	Following comments received from Mr. Ajay Maurya, Sc-D, Chandigarh Branch Office-I, BIS: i) In clause 6.1, Sometimes, the manufacture joins two sheets of 0.8 mm to make the design more stable and for more strength. So, the clause may be revised accordingly. ii) In Table 1, the Feed Hopper and Feed Rate/Distribution plates may be restricted to be made up of stainless-steel only as they will be in direct contact of the grains/seeds.	The committee examined the comments received from CHBO-I, BIS and after due deliberation vis-à-vis the requirements in the draft standard and decided as under: i) The comments on clause 6.1 were not accepted considering the technical reason that joining two sheets together may cause vibration and should not be preferred. ii) The committee accepted the comment on Table 1 and decided to keep only stainless steel for feed hopper and feed rate/distribution plates. Thereafter, the committee directed the member secretary to merge the draft revision of IS 5718 covering the test code for the equipment (<i>see</i> sl. no. 7 of this table) into this draft and send the merged draft into wide circulation for a period of 60 days to seek comments. The committee further decided to withdraw IS 5718 once the revision of IS 11041 is published.

3.	FAD 20 (24261)WC Agricultural produce milling machinery — Emery stones for burr flour mills — Specification and Test code (<i>second revision</i> of IS 10520)	No comments received during wide circulation.	The committee noted that no comments were received during wide circulation and decided to send the draft for publication.
4.	FAD 20 (24262)WC Recommendations for aperture size of sieves for Seed cleaners (<i>first revision</i> of IS 10892)	No comments received during wide circulation.	<p>Dr Vinod Kalbande, Indosaw Industrial Products Private Limited, Ambala apprised the committee that both two screen type seed cleaners (at top and bottom) and three screen type seed cleaners (at top, middle and bottom) are being manufactured and used and recommended that aperture sizes of middle screen should also be included in the standard apart from aperture size for top and bottom screens.</p> <p>The committee agreed to the suggestion made by Dr Kalbande and requested him to include the recommendations for aperture sizes for middle screen and provide the modified draft within 15 days from the date of minutes circulation. The revised draft would be circulated to the members for 07 days for comments, if any. In case no comments are received, the committee decided to process the draft into publication after approval of Chairperson, FAD 20.</p>
5.	FAD 20 (24263)WC Agricultural produce milling - Machinery - Roller flour mills - Terminology and flow diagram (<i>first</i>	No comments received during wide circulation.	The committee noted that no comments were received during wide circulation. While reviewing the draft, the committee decided to include the definition of “degermination” before sending the draft for publication and requested member secretary to do

	<i>revision</i> of IS 12833)		the needful after taking inputs from FAD 20/Panel 19.
6.	FAD 20 (24264)WC Agricultural produce milling machinery - Milling of pulses - Terminology and flow diagram (<i>first revision</i> of IS 13793)	No comments received during wide circulation.	The committee noted that no comments were received during wide circulation and decided to send the draft standard for publication.
7.	FAD 20 (24573)WC Agricultural produce processing equipment - Seed or grain cleaners - Test code (<i>third revision</i> of IS 5718)	Editorial comments received from Dr R. Visvanathan suitably included in the drafts.	See the decision taken in Sl. no. 2 of this table.
8.	FAD 20 (24574)WC Seed grain processing equipment - Gravity separator - Specification and Test code (<i>first revision</i> of IS 14460)		The committee noted that no comments were received during wide circulation and decided to send it for publication.
9.	FAD 20 (24575)WC Seed grain processing machinery - Indented cylinder grader - Test code (<i>first revision</i> of IS 12576)		In view of the decision taken at Sl. No. 1 above, the committee decided to start the document afresh incorporating the specification for indented cylinder grader along with the test code. Dr. Visvanathan was requested to provide the modified draft revision accordingly and the committee decided to send the draft as a P-draft for comments of members.

ITEM 5 APPROVAL OF DRAFT STANDARDS FOR WIDE CIRCULATION (WC)**5.1 Doc. No. FAD20 (24661)P Mobile Agro-processing Equipment Unit for Food-grains — Safety Requirements**

The committee noted that no comments were received on the draft and while reviewing the draft, decided to include the requirement for static and dynamic balancing of the unit in order to avoid the toppling of trolley due to improper location of center of gravity. Consequently, the committee constituted a working group FAD20/WG1 “To Develop Indian Standard on Mobile Agro-processing Equipment Unit for Food-grains” which includes Dr Ravindra Naik, CIAE Coimbatore (as a convenor), Dr R. K. Vishwakarma, CIPHET Ludhiana, Dr Vinod Kalbande, Dr Sandhya Singh, PAU Ludhiana for preparing this draft.

5.2 IS 18267: 2023 Food Serving Utensils Made from Agri By-Products — Specification

The committee reviewed the draft revision as provided in Annex 14 of the agenda and decided to send into wide circulation for a period of 60 days to seek comments. The committee further requested the member secretary to circulate the document to the manufacturers of this product for seeking their comments.

5.3 Draft revision of IS 14442: 1997 Agricultural Produce Milling Machinery — Burr Mill Specifications and Test Code

The committee reviewed the draft revision and decided to send into wide circulation for a period of 60 days to seek comments.

5.4 Draft revision of IS 1973: 1999 Sugarcane Crushers — Specification

The committee decided to merge following two Indian Standards into the draft revision and decided to change the title to “Sugarcane Juice Extractor — Specification and Test Code”:

- a) IS 6997 : 2021 Test Code for Sugarcane Crushers (*first revision*)
- b) IS 15561 : 2005 Sugarcane Crushers — Safety Requirement

Thereafter, the committee decided to revise this standard based on the latest technology and models available in the market. Consequently, the committee constituted a working group FAD20/WG2 “To Revise Indian Standard of Sugarcane Juice Extractor” which includes Dr Sandeep Mann (as a convenor), Mr Gurwant Singh, COFAME, Ludhiana, Dr Dilip Kumar, Indian Institute of Sugarcane Research, Lucknow and Dr. P.V.K. Jagannadha Rao, Regional Agricultural Research Station, Acharya N. G. Ranga Agricultural University, Anakapalle for preparing this draft.

ITEM 6 COMMENT RECEIVED ON EXISTING INDIAN STANDARDS**6.1 Comment Received on 17854: 2022 Equipment for Manufacture of Fortified Rice — Specification**

6.1.1 The committee deliberated upon the comment received from Mr Hitesh Panchal, Om Engineering, Ahmedabad on IS 17854 as provided in Annex 16 of the agenda and decided as under :

a) For comment on clause 4.1.1.2, the committee decided to retain the option for batch type equipment as long as they are meeting the performance requirements given in the standard. However, for better performance and flexibility to the manufacturer, the committee decided to issue an amendment to this standard to include either one or a combination of different types of blenders for manufacturing FRK.

The committee decided to send this draft amendment into wide circulation for a period of 30 days to seek comments.

b) For comment on clause 4.1.2.1, the committee was of the view that the requirement for feeding the FRK and rice at a predefined rate is given in the standard and the standard neither prescribes nor restricts the manufacturer for using any specific type of feed rate controlling mechanism. Accordingly, the committee decided not to modify the clause.

6.1.2 The committee noted the comment received from Patna Branch Office (PTBO), BIS to include a tentative design in the standard. However, while reviewing the existing IS 17854 : 2023, the committee observed that as different types of blenders are permitted in the standard, it is not possible to include a common design of FRK blender in the standard.

6.2 Comment received on IS 19040 : 2023 Millet Dehusker — Centrifugal Type — Specification and Test Code

The committee noted the comment received from Coimbatore Branch Office (CTBO). However, as it was an editorial comment, the committee decided to consider the same in the next revision/amendment of the standard.

ITEM 7 NEW WORK ITEM PROPOSAL (NWIP)

7.1 Development of Indian Standard on Test Code for Hammer Mill

The committee noted that the Indian Standards on hammer mill (IS 10444 : 1983, IS 9579 : 1979, and IS 9580 : 1980) were withdrawn by Mechanical Engineering Department, BIS. These standards were meant for hammer mill used in crushing rocks, mineral, coaks etc. and not for crushing agricultural commodity as apprised by the member secretary. Therefore, the committee decided to take up the subject as New Work Item Proposal and decided to change the title of this standard to “Hammer Mill for Agricultural Produce — Specification and Test Code”. As this standard was proposed by CIPHET Ludhiana, the committee requested member secretary to write to them to include specification for hammer mill in the draft.

7.2 Development of Indian Standard on “Test Code for Power Operated Jute Decorticator”

The committee noted the information shared by NINFET Kolkata about initiative taken for the commercialization of power operated jute decorticator. Thereafter, the committee decided to take up this subject as New Work Item Proposal and decided to also include specification and safety requirements in the standard. The committee constituted a working group “FAD20/WG3

Development of Indian Standard on Power Operated Jute Decorticator” for preparing the working draft. This FAD20/WG3 includes following expert members:

- a) Dr V. B. Shambhu, Principal Scientist, NINFET Kolkata (*convenor*).
- b) Er Prateek Shrivastava, Scientist, NINFET Kolkata.
- c) Dr V. G. Arude, Principal Scientist, CIRCOT Mumbai
- d) Dr Ranjan Kumar Naik, Principal Scientist, CRIJAF Kolkata

7.3 Development of Indian Standard on Coconut Dehusker

The committee agreed to the subject proposed by Dr Ravindra Naik for developing Indian Standard on coconut dehusker and decided that this standard shall cover specification, safety requirement and test methods. The committee constituted a working group “FAD20/WG4 Development of Indian Standard on Coconut Dehusker” for preparing the working draft. This FAD20/WG4 includes following expert members:

- a) Dr Ravindra Naik, CIAE Coimbatore (*convenor*).
- b) Dr R. Visvanathan
- c) Dr M.R. Manikantan, ICAR-CPCRI Kasaragod

ITEM 8 STATUS OF RAMAINING SUBJECTS NOT COVERED IN ABOVE AGENDA ITEMS

Sl. No.	Indian Standards/Doc. No.	Decision taken	Current status/Action Taken	Decision take in 24 th meeting
1	FAD20(21688) Root and tuber vegetable washer — continuous type — specification and test code	In its 22 nd meeting, the committee decided to send this draft into WC for a period of 60 days to seek comments.	This draft is under process for sending into wide circulation.	The committee noted the information.
2	FAD20(20568) Seed cotton cylinder cleaner — Test code	In its 20 th meeting, the committee decided to send this draft into WC for a period of	The draft was again discussed with Dr V. G. Arude, CIRCOT Mumbai and is currently under wide	

		60 days to seek comments.	circulation stage.	
3	FAD20 (24218) Pearler cum polisher for millets — Specification	In its 23 rd meeting, the committee decided to send this draft into WC for a period of 60 days to seek comments.	This draft is currently under wide circulation stage.	
4	FAD20(17388) Seeds and grain processing and storage — Terminology	In its 22 nd meeting, the committee decided to send this draft into WC for a period of 60 days to seek comments.	This draft is currently under wide circulation stage.	
5	FAD 20 (17385) Grader — Citrus — Size based (first revision of IS 15831)	-	Draft under preparation by i) Dr Nachiket Kotwaliwale, ii) Dr Sandhya Singh and iii) Dr Eyarki Nambi.	Dr Sandhya Singh, PAU Ludhiana apprised the committee that the requirement and methods mentioned in IS 15831 are obsolete and major changes need to be done. She suggested to carry out a study for collecting information of various types of AI based graders manufactured nowadays to develop specification. The committee decided to take up a R&D project to collect the empirical data for various models of citrus grader and requested Dr Sandhya Singh to prepare the Terms of Reference (ToR) for this project.

6	<p>a) IS 15858 : 2013 Cotton Seed Delinting Machinery - Delinting Machine with Electrical Heating and hydraulic system – specification</p> <p>b) IS 15859 : 2013 Cotton seed delinting machinery - Buffing machine with air jet and nylon brush – Specification</p> <p>c) IS 15860 : 2013 Cotton seed delinting machinery - Ammonia cotton seed neutralizer machine with ammonia vaporizer – Specification</p> <p>d) IS 15861 : 2013 Cotton seed delinting machinery - pollution control system with scrubber, cyclone, chimney, hoods and ducting – Specification</p> <p>e) IS 15862 : 2013 Cotton seed delinting</p>	<p>The committee requested member secretary to write to Dr S.K. Shukla, CIRCOT Mumbai again for the same.</p>	<p>A visit was made by Member Secretary, FAD 20 with Dr S. K. Shukla and Dr V. G. Arude from CIRCOT Mumbai at Nuziveedu Seeds Limited, Aurangabad. This visit was planned to discuss the recent updation or development in the cotton seed delinting machinery.</p> <p>Outcome of visit : As all the Indian Standards from a) to e) are based on HCL based seed delinting process, a discussion was made and all the Indian Standard were reviewed during the discussion with General Manager and other technical person of plant. The discussion was concluded with the following points:</p>	<p>Dr V. G. Arude apprised the committee about the visit made at NSL Cotton Corporation Ltd. Aurangabad. Considering the outcome of this visit, the committee noted that no change is required in all the standards as these relate to HCL gas based cotton seed delinting process. Therefore, the committee decided to reaffirm the standards.</p>
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	machinery - HCL gas generation unit - Specification		i) All the major delinting plants are gradually getting shifted from HCL to H ₂ SO ₄ based seed delinting process. ii) No comment was made by the Industry on these Indian Standards as there is no correction required.	
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ITEM 9 REMAINING PRE-2000 INDIAN STANDARDS

The committee deliberated upon the following Indian Standards and constituted a working group FAD20/WG5 “Revision of Indian Standards of Grain Dryer” for revision of these standards:

- a) IS 8108 (Part 2) : 1984 Test Code for Grain Dryers : Part 2 Method of Tests for Continuous Dryers
- b) IS 8108 (Part 3) : 1984 Test Code for Grain Dryers : Part 3 Method of Tests for In-Silos Dryers

This working group would include Dr K. Narsaiah, ADG (Process Engineering), ICAR New Delhi (as a *Convenor*), Dr Ravindra Naik, CIAE Coimbatore and Dr R. Visvanathan as experts members

Considering the importance of drying at farmer level and low adoption rate of dryers by farmers, the Chairperson, FAD 20 suggested BIS should organize a seminar/webinar in collaboration with ICAR for spreading the awareness among farmers and encouraging them to adopt drying equipment at the farm level.

ITEM 10 ANY OTHER BUSINESS

There being no other agenda, the meeting ended with a hearty vote of thanks to the Chairperson and members.

ITEM 11 TIME AND PLACE FOR THE NEXT MEETING

The next meeting of the committee would be scheduled in July 2024. The date and place for the meeting would be decided in consultation with the Chairperson, FAD 20.

ANNEX A

**ATTENDANCE FOR 24TH MEETING OF AGRICULTURE AND FOOD
PROCESSING EQUIPMENT
SECTIONAL COMMITTEE, FAD 20**

Sl. No.	Organization	Members Details
1.	Indian Council of Agricultural Research, New Delhi	Dr S. N. Jha (<i>Chairperson</i>) Dr K. Narsaiah
2.	Agriculture Machinery Manufacturers Association, Pune	Dr. Surendra Singh, Mr. Mitul Panchal
3.	Confederation of Food and Agro-Processing Machinery Enterprises , Ludhiana	Mr Gurwant Singh
4.	ICAR-Central Institute for Research on Cotton Technology, Mumbai	Dr V. G. Arude
5.	ICAR-Central Institute of Agricultural Engineering, Bhopal	Dr Ravindra Naik
6.	ICAR-Central Institute of Post-Harvest Engineering and Technology, Ludhiana	Dr Sandeep Mann
7.	ICAR-Indian Institute of Horticultural Research, Bengaluru	Dr A. Carolina Rathina Kumari
8.	Indosaw Industrial Products Private Limited, Ambala Cantt.	Dr Vinod H. Kalbande
9.	Ministry of Agriculture, Department of Agriculture, New Delhi	Mr Y. K. Rao
10.	Punjab Agricultural University, Ludhiana	Dr Sandhya Singh
11.	Tamil Nadu Agricultural University, Coimbatore	Dr P. Sudha
12.	In Personal Capacity	Dr R. Visvanathan
13.	In Personal Capacity	Dr S. D. Deshpande
14.	Food & Agriculture Department, BIS, New Delhi	Smt. Suneeti Toteja
15.	Food & Agriculture Department, BIS, New Delhi	Shri Pradeep Sharma